

TRANSACTIONS  
OF THE  
AMERICAN  
FISHERIES  
SOCIETY



SEPTEMBER, 1917

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# The American Fisheries Society

Organized 1879—Incorporated 1910

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**TRANSACTIONS**  
of the  
**American Fisheries Society**

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"To promote the cause of fish culture; to gather and diffuse information bearing upon its practical success, and upon all matters relating to the fisheries; to unite and encourage all interests of fish culture and the fisheries; and to treat all questions of a scientific and economic character regarding fish."

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**Edited by Raymond C. Osburn**

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**SEPTEMBER, 1917**

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**Published Quarterly by the Society**  
**NEW YORK, N. Y.**

## CERTIFICATE OF INCORPORATION OF THE AMERICAN FISHERIES SOCIETY

We, the undersigned, persons of full age and citizenship of the United States, and a majority being citizens of the District of Columbia, pursuant to and in conformity with sections 599 to 603, inclusive, of the Code of Law for the District of Columbia, enacted March 3, 1901, as amended by the Acts approved January 31 and June 30, 1902, hereby associate ourselves together as a society or body corporate and certify in writing:

1. That the name of the Society is the AMERICAN FISHERIES SOCIETY.

2. That the term for which it is organized is nine hundred and ninety-nine years.

3. That its particular business and objects are to promote the cause of fish culture; to gather and diffuse information bearing upon its practical success, and upon all matters relating to the fisheries; to unite and encourage all interests of fish culture and the fisheries; and to treat all questions of a scientific and economic character regarding fish with power:

a. To acquire, hold and convey real estate and other property, and to establish general and special funds.

b. To hold meetings.

c. To publish and distribute documents.

d. To conduct lectures.

e. To conduct, endow, or assist investigation in any department of fishery and fish-culture science.

f. To acquire and maintain a library.

g. And, in general, to transact any business pertinent to a learned society.

4. That the affairs, funds and property of the corporation shall be in general charge of a council, consisting of the officers and the executive committee, the number of whose members for the first year shall be seventeen, all of whom shall be chosen from among the members of the Society.

Witness our hands and seals this 16th day of December, 1910.

SEYMOUR BOWER (Seal)

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WILLIAM E. MEEHAN (Seal)

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Recorded April 16, 1911.

# AMERICAN FISHERIES SOCIETY

## Organized 1870

The first meeting of the Society occurred December 20, 1870. The organization then effected continued until February, 1872, when the second meeting was held. Since that time there has been a meeting each year, as shown below. The respective presidents were elected at the meeting, at the place, and for the period shown opposite their names, but they presided at the subsequent meeting.

### PRESIDENTS, TERMS OF SERVICE, AND PLACES OF MEETING.

1. William Clift	1870-1872	New York, N. Y.
2. William Clift	1872-1873	Albany, N. Y.
3. William Clift	1873-1874	New York, N. Y.
4. Robert B. Roosevelt	1874-1875	New York, N. Y.
5. Robert B. Roosevelt	1875-1876	New York, N. Y.
6. Robert B. Roosevelt	1876-1877*	New York, N. Y.
7. Robert B. Roosevelt	1877-1878	New York, N. Y.
8. Robert B. Roosevelt	1878-1879	New York, N. Y.
9. Robert B. Roosevelt	1879-1880	New York, N. Y.
10. Robert B. Roosevelt	1880-1881	New York, N. Y.
11. Robert B. Roosevelt	1881-1882	New York, N. Y.
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13. James Benkard	1883-1884	New York, N. Y.
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16. W. M. Hudson	1886-1887	Chicago, Ill.
17. William L. May	1887-1888	Washington, D. C.
18. John H. Bissell	1888-1889	Detroit, Mich.
19. Eugene G. Blackford	1889-1890	Philadelphia, Pa.
20. Eugene G. Blackford	1890-1891	Put-in Bay, Ohio
21. James A. Henshall	1891-1892	Washington, D. C.
22. Herschel Whitaker	1892-1893	New York, N. Y.
23. Henry C. Ford	1893-1894	Chicago, Ill.
24. William L. May	1894-1895	Philadelphia, Pa.
25. L. D. Huntington	1895-1896	New York, N. Y.
26. Herschel Whitaker	1896-1897	New York, N. Y.
27. William L. May	1897-1898	Detroit, Mich.
28. George F. Peabody	1898-1899	Omaha, Neb.
29. John W. Titcomb	1899-1900	Niagara Falls, N. Y.
30. F. B. Dickerson	1900-1901	Woods Hole, Mass.
31. E. E. Bryant	1901-1902	Milwaukee, Wis.
32. George M. Bowers	1902-1903	Put-in Bay, Ohio
33. Frank N. Clark	1903-1904	Woods Hole, Mass.
34. Henry T. Root	1904-1905	Atlantic City, N. J.
35. C. D. Joslyn	1905-1906	White Sulphur Spgs., W. Va.
36. E. A. Birge	1906-1907	Grand Rapids, Mich.
37. Hugh M. Smith	1907-1908	Erie, Pa.
38. Tarleton H. Bean	1908-1909	Washington, D. C.
39. Seymour Bower	1909-1910	Toledo, Ohio
40. William E. Meehan	1910-1911	New York, N. Y.
41. S. F. Fullerton	1911-1912	St. Louis, Mo.
42. Charles H. Townsend	1912-1913	Denver, Colo.
43. Henry B. Ward	1913-1914	Boston, Mass.
44. Daniel B. Fearing	1914-1915	Washington, D. C.
45. Jacob Reighard	1915-1916	San Francisco, Cal.
46. Geo. W. Field	1916-1917	New Orleans, La.

\*A special meeting was held at the Centennial Grounds, Philadelphia, Pa., October 6 and 7, 1876.

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# The American Fisheries Society

## LIST OF MEMBERS, 1916-1917

Showing Year of Election to Membership

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- \*13 CASTING CLUB DE FRANCE, Place de Concorde, Paris, France.
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- \*13 CHAMBERS, F. W., Salt Lake City, Utah.
- \*03 CHANDLER, HORATIO, Kingston, Mass.
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- \*13 CHURCHILL, WINSTON, Cornish, N. H.

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- '13 COLES, RUSSELL J., Danville, Va.
- '14 CONGER, GEO. C., 748 E. Market St., Akron, Ohio.
- '16 COPELAND, T. H., Orangeburg, S. C.
- \*'00 CORLISS, C. G., U. S. Bureau of Fisheries, Gloucester, Mass.
- '16 COVINGTON, THOS. E., 1793 Ashland Ave., St. Paul, Minn.
- '10 CRAMPTON, PROF. HENRY EDWARD, American Museum of Natural History, New York City.
- '14 CRAMPTON, JOHN M., State Superintendent, Board of Fisheries and Game, New Haven, Conn.
- '13 CRANDALL, A. J., Ashaway, R. I.
- '11 CRASSER, HUGO, 1304 Charles St., LaCrosse, Wis.
- '08 CULLER, C. F., U. S. Bureau of Fisheries, Wytheville, Va.
- '04 CUNNINGHAM, F. W., U. S. Bureau of Fisheries, Gloucester, Mass.
- '13 CURRAN, WM. E., 3 T Wharf, Boston, Mass.
- '16 CUSHMAN, O. P., Mammoth Springs, Ark.
- '12 DANGLADE, ERNEST, U. S. Bureau of Fisheries, Washington, D. C.
- '16 DASPITT, ARMAND P., Baton Rouge, La.
- '13 DAVID, GEO., U. S. Bureau of Fisheries, Woods Hole, Mass.
- '14 DAVIDSON, J. O., Wisconsin Fish Commission, Madison, Wis.
- '06 DAVIES, DAVID, U. S. Bureau of Fisheries, Put-in Bay, Ohio.
- '13 DAVIS, H. C., Secretary, Delaware Fish Commission, Laurel, Del.
- '13 DAYNES, J. A., Commissioner, Louisiana Conservation Commission, New Orleans, La.
- '91 and '10 DEAN, PROF. BASHFORD, Columbia University, New York City.
- '01 DEAN, HERBERT D., Fisheries Station, Bozeman, Mont.
- '12 DEBACA, TRINIDAD C., State Fish and Game Warden, Santa Fe, New Mexico.
- \*'01 DENYSE, WASHINGTON J., Gravesend Beach, Borough of Brooklyn, N. Y.
- '13 DEROCHE, JAS. D., U. S. Bureau of Fisheries, Nashua, N. H.
- '05 DEPUY, HENRY F., 32 W. 40th St., New York City.
- '16 DEWEESE, J. W., Lake Providence, La.
- '08 DETWILER, JOHN Y., Honorary President, Florida Fish Commission, New Smyrna, Fla.
- '13 DICKINSON, F. H., 131 State St., Boston, Mass.
- '13 DICKINSON, P. A., State Fish Hatchery, Roxbury, Vt.
- '12 DILO, WILL H., Hearst Building, Chicago, Ill.
- '14 DIMICK, F. F., 8 Long Wharf, Boston, Mass.
- '99 DINSMORE, A. H., U. S. Bureau of Fisheries, St. Johnsbury, Vt.
- '13 DODGE, LESLIE G., 71 Lexington St., Auburndale, Mass.
- \*'07 DOMINY, JEREMIAH M., South Haven, N. Y.
- '15 DOW, FRANK P., Tacoma, Wash.
- '13 DOWNEY, BEN O., 623 Manchester St., Lexington, Ky.
- '99 DOWNING, S. W., U. S. Bureau of Fisheries, Put-in Bay, Ohio.
- '09 DOYLE, HENRY, Winch Bldg., Vancouver, B. C.

- '13 DREW, S. S. South Cle Elum, Wash.  
'00 DUNLAP, I. H., U. S. Bureau of Fisheries, Washington, D. C.  
'16 DUNN, W. W., 397 Bates Ave., St. Paul, Minn.  
'13 DURKIN, D. L., Minnesota Fish and Game Commission, Frazee, Minn.  
  
'10 EATON, HOWARD, Wolf, Wyo.  
'00 EDWARDS, VINAL N., U. S. Bureau of Fisheries, Woods Hole, Mass.  
'16 EHEIM, J. M., Hutchinson, Minn.  
'13 EMBODY, GEO. C., Assistant Professor of Aquiculture, Cornell University, Ithaca, N. Y.  
'13 ESTES, B. E., 64 Ames Bldg., Boston, Mass.  
'06 EVANS, LIEUT.-COL. KELLY, Metropolitan Club, New York City.  
'02 EVERMANN, DR. BARTON W., Director of the Museum, California Academy of Sciences, San Francisco, Cal.  
'04 EVERMANN, J. W., First Vice-Pres., St. Louis South Western Railway of Texas, Dallas, Texas.  
  
'15 FARISH, R. R., San Francisco, Cal.  
'15 FARRELL, R. S., 140 Front St., Portland, Ore.  
FASSETT, H. C., St. Paul, Pribilof Islands, Alaska.  
\*00 FEARING, DANIEL B., Board of Inland Fisheries Commissioners, Newport, R. I.  
\*12 FEARING, MRS. D. B., Newport, R. I.  
'16 FEATENBY, ALBERT R., Harrisburg, Pa.  
'09 FEICK, JOHN A., Sandusky, Ohio.  
'15 FEILDING, J. B., Technical Superintendent, Department of Fisheries, Barrie, Ontario.  
'16 FERGUSON, JAMES A., Duluth, Minn.  
'07 FIELD, DR. GEORGE W., Biological Survey, Washington, D. C.  
'10 FIELD, PROF. IRVING A., Clark College, Worcester, Mass.  
'99 FILKINS, B. G., U. S. Bureau of Fisheries, Northville, Mich.  
'12 FINLEY, W. L., 651 E. Madison St., Portland, Ore.  
'04 FISHER, JOHN F., Chapinville, Conn.  
'12 FLETCHER, EMERY L., Ely, Nev.  
'13 FLYFISHERS' CLUB, 36 Piccadilly, W. London, England.  
\*15 FOLGER, J. A., Pres., J. A. Folger Co., Howard & Spencer Sts., San Francisco, Cal.  
'04 FOLLETT, RICHARD E., Detroit Zoological Society, Palmer Building, Detroit, Mich.  
'12 FOOT, FRANCIS D., 42 Florentine Gardens, Springfield, Mass.  
'15 FORBES, ROBERT, 1705 Knox St., South Bellingham, Wash.  
'10 FORBES, DR. S. A., University of Illinois, Urbana, Ill.  
'14 FORSYTH, ROBERT, 1157 The Rookery, Chicago, Ill.  
\*12 FORTMANN, HENRY F., 1007 Gough St., San Francisco, Cal.  
'10 FOSTER, FREDERICK J., U. S. Bureau of Fisheries, Saratoga, Wyo.  
'12 FOUND, WM. A., Department of Marine and Fisheries, Ottawa, Canada.  
'10 FOWLER, C. F., Waterloo, Iowa.  
'10 FOWLER, KENNETH, 1 Fulton Market, New York City.  
'15 FREEMAN, MILLER, Smith Bldg., Seattle, Wash.  
  
'14 GARCELON, WM. F., 405 Sears Bldg., Boston, Mass.  
\*10 GARDNER, MRS. CHARLES C., The Cliffs, Newport, R. I.  
'13 GARDNER, JOHN W., U. S. Bureau of Fisheries, Concrete, Wash.  
'92 GAVITT, W. S., Lyons, N. Y.  
'13 GERRY, HON. PETER G., Providence, R. I.  
'13 GERRY, ROBERT L., 258 Broadway, New York City.

- '11 GESERICH, L. A., President, Missouri State Fish Commission, St. Louis, Mo.  
'13 GETZ, NORMAN, Corry, Pa.  
'16 GIBB, H. A., Detroit, Minn.  
'05 GIBBS, CHARLES E., U. S. Bureau of Fisheries, East Orland, Me.  
'15 GILBERT, PROF. C. H., Stanford University, Cal.  
'16 GLIMPSE, F. B., Wells-Fargo Express Co., Kansas City, Mo.  
'13 GOFFIN, ROBERT A., U. S. Bureau of Fisheries, Woods Hole, Mass.  
'16 GOLDISH, S. L., Lake Superior Fish Co., 203 East First St., Duluth, Minn.  
'13 GOODSPEED, L. B., Boston, Mass.  
'13 GOODWIN, O. C., Peace Dale, R. I.  
'13 GOURVILLE, J. H., 11 T Wharf, Boston, Mass.  
'13 GRAHAM, E. A., Berkeley, Taunton, R. F. D., Mass.  
'10 GRAHAM, GEORGE H., Massachusetts Commission on Fisheries and Game, 423 Main St., Springfield, Mass.  
'10 GRATER, CHARLES B., U. S. Bureau of Fisheries, Yes Bay, Alaska.  
'03 GRAY, GEORGE M., Woods Hole, Mass.  
'10 GREENE, DR. CHAS. W., University of Missouri, 814 Virginia Ave., Columbia, Mo.  
'14 GREENE, JOHN V., U. S. Bureau of Fisheries, Washington, D. C.  
'10 GREENLEAF, GEORGE W., U. S. Bureau of Fisheries, West Boothbay Harbor, Me.  
'13 GUERIN, THEOPHILE, Treasurer, Rhode Island Commission of Fisheries, Woonsocket, R. I.  
'16 GUERNSEY, GUY, 1644 Vernon Ave., Chicago, Ill.  
'15 GUNCKEL, WILL H., M. and C. Savings Bank, Toledo, Ohio.  
'13 GUPTIL, GEO. L., Myrick's, Mass.  
  
'05 HAAS, WILLIAM, Pennsylvania Fish Commission, Spruce Creek, Pa.  
'00 HAHN, E. E., U. S. Bureau of Fisheries, Boothbay Harbor, Me.  
'78 HALEY, CALEB, Fulton Market, New York City.  
'13 HALTER, LAWRENCE, 637 S. Main St., Akron, Ohio.  
'07 HANCOCK, W. K., U. S. Bureau of Fisheries, Baird, Cal.  
'16 HAND, E. R., Fairmont, Minn.  
'06 HANKINSON, PROF. T. L., Charleston, Ill.  
'10 HANSEN, FERDINAND, Russian Caviar Co., 170 Chambers St., New York City.  
'95 HANSEN, G., Osceola, Wis.  
'16 HARPELL, DR. JAMES JOHN, 45 St. Alexander St., Montreal, Quebec, Canada.  
'13 HARRIMAN, AVERIL, Arden, N. Y.  
'15 HARRIS, P. E., 503 Maynard Bldg., Seattle, Wash.  
'03 HARRON, L. G., U. S. Bureau of Fisheries, Washington, D. C.  
'09 HART, W. O., 134 Carondelet St., New Orleans, La.  
'89 HARTLEY, R. M., 560 Bullitt Building, Philadelphia, Pa.  
'06 HARTMANN, PHIL, Erie, Pa.  
'04 HAY, PROF. W. P., Kensington, Md.  
'04 HAYFORD, CHARLES O., Supt., State Fish Hatchery, Hackettstown, N. J.  
'13 HAYFORD, DR. ERNEST L., 2301 Monroe St., Chicago, Ill.  
'13 HAYFORD, ROBERT E., De Bruce, N. Y.  
'13 HEIMAN, A. J., Barberton, Ohio.  
'08 HEMINGWAY, E. D., 123 Rochelle Ave., Wissahickon, Phila., Pa.  
'84 HENSHALL, DR. JAMES A., 811 Dayton St., Cincinnati, O.  
'15 HEROLD, R., 235 Montgomery St., San Francisco, Cal.  
'10 HERRICK, PROF. FRANCIS HOBART, Adelbert College, Cleveland, Ohio.  
'13 HERRICK, GEO. H., Attleboro, Mass.  
'13 HIGGINS, ALF. S., 142 Atlantic Ave., Boston, Mass.



- '15 HILDEBRAND, SAMUEL F., U. S. Fisheries Laboratory, Beaufort, N. C.  
'08 HINRICHS, HENRY, JR., Keystone Fish Co., Erie, Pa.  
'13 HITCHINGS, FRANK E., Supt. State Fish Hatchery, East Sandwich, Mass.  
'03 HOBART, T. D., Pampa, Texas.  
'13 HOFFSES, ELVIN J., 195 Ash St., Waltham, Mass.  
'13 HOFFSES, G. RAYMOND, U. S. Bureau of Fisheries, Afognak, Alaska.  
'95 HOLDEN, H. S., Syracuse, N. Y.  
'16 HOLMES, WM. S., Tallulah, La.  
'15 HOODEN, K., Monterey, Cal.  
\*10 HOPFER, GEORGE L., U. S. Bureau of Fisheries, Baird, Cal.  
'13 HOVER, HERBERT, Germantown, N. Y.  
'13 HOWARD, ARTHUR D., Ph.D., Scientific Assistant, U. S. Bureau of Fisheries, Fairport, Ia.  
'04 HOXSIE, F. D., Superintendent, American Fish Culture Company, Carolina, R. I.  
'00 HUBBARD, WALDO F., U. S. Bureau of Fisheries, Nashua, N. H.  
'16 HUDERLE, JOHN, Hutchinson, Minn.  
'12 HUNSAKER, W. J., Board of State Fish Commissioners, Saginaw, Mich.  
'15 HUNT, E. W., Sisson, Cal.  
'16 HUNTER, T. F., New Orleans, La.  
'13 HUNTSMAN, A. G., Ph.D., Asst. Prof. of Biology, University of Toronto, Toronto, Canada.  
\*95 HURLBUT, H. F., 13 Iveson Ave., East Lynn, Mass.  
'10 HUSSAKOF, DR. LOUIS, American Museum of Natural History, New York City.  
'12 HUSTED, JAMES D., Denver, Colo.  
  
'13 INGALLS, GEO. M., 124 Commerce St., Boston, Mass.  
'12 INK, CHARLES, 434 East Market St., Akron, Ohio.  
  
'16 JACKSON, CHAS. F., Pine City, Minn.  
'16 JASTREMSKI, L. H., Houma, La.  
'15 JENKINS, DR. OLIVER P., Stanford University, Cal.  
'95 JENNINGS, G. E., Fishing Gazette, 203 Broadway, New York City.  
'16 JENNINGS, R. H., Orangeburg, S. C.  
'03 JEWETT, STEPHEN S., 614 Main St., Laconia, N. H.  
'16 JOHNSON, A. S., 300 Exchange Bldg., Duluth, Minn.  
'13 JOHNSON, E. H., Sabattis, N. Y.  
'03 JOHNSON, DR. F. M., 43 Tremont St., Boston, Mass.  
'06 JOHNSON, MRS. F. M., 43 Tremont St., Boston, Mass.  
'15 JOHNSON, JAMES G., R. I. Commission of Inland Fisheries, Riverside, R. I.  
'13 JOHNSTON, CASSIUS A., Hoosick Falls, N. Y.  
'15 JOHNSTONE, F. C., Coleman Bldg., Seattle, Wash.  
'13 JONES, E. LESTER, U. S. Coast and Geodetic Survey, Washington, D. C.  
'16 JONES, J. H., Fergus Falls, Minn.  
'08 JONES, THOS. S., Louisville, Ky.  
'02 JOSLYN, C. D., 200 Fifth Ave. (Suite 840), New York City.  
  
'14 KAVANAUGH, W. P., Bay City, Mich.  
'05 KEESECKER, A. G., U. S. Bureau of Fisheries, Erwin, Tenn.  
'99 KEIL, W. M., Tuxedo Park, N. Y.  
'12 KEMMERICH, JOSEPH, U. S. Bureau of Fisheries, Washington, D. C.  
'15 KENDALL, F. P., Farling Bldg., Portland, Ore.

- '15 KENDALL, NEAL, Farling Bldg., Portland, Ore.  
'02 KENDALL, DR. WILLIAM C., U. S. Bureau of Fisheries, Washington, D. C.  
'04 KENT, EDWIN C., Tuxedo Club, Tuxedo Park, N. Y.  
'16 KEYES, H. W., Ranier Minn.  
'15 KIERULFF, C. A., 2605 Fulton St., Berkeley, Cal.  
'15 KIERULFF, T. C., Flat Iron Bldg., San Francisco, Cal.  
'13 KINNEY, M. J., 510 Corbett Bldg., Portland, Oregon.  
'04 KISTEROCK, JOSIAH, JR., 3824 Spruce St., Philadelphia, Pa.  
'04 KITTEDGE, BENJAMIN R., Carmel, N. Y.  
'15 KLEVENHUSEN, F., Altoona, Wash.  
'15 KNIGHT, H. J., Alaska Packers' Association, San Francisco, Cal.  
'16 KOMOLI, C. F., Dundas, Minn.  
'10 KOPPLIN, PHILIP, JR., Missouri Fish Commission, Forest Park, St. Louis, Mo.  
'14 KRAIKER, CARL, 1725 N. 7th St., Philadelphia, Penn.  
'16 KRAPE, R. E., 257 Euclid Ave., Ridgway, Pa.  
'16 KUNTZ, W. J., Waconia, Minn.  
'03 LAMBSON, G. H., U. S. Bureau of Fisheries, Sisson, Cal.  
'15 LANCEFIELD, DONALD E., Box 733, Leavenworth, Wash.  
'11 LAND, S. E., Department of Game and Fish, Denver, Colo.  
'16 LANDRY, D. J., Lake Charles, La.  
'16 LANGLOIS, CONRAD J., New Road, La.  
'04 LAUMEN, FELIX A., U. S. Bureau of Fisheries, Mammoth Springs, Ark.  
'08 LAY, CHARLES, Sandusky, Ohio.  
'16 LEA, CHARLES M., West Thorpe Farm, Devon, Pa.  
'98 LEACH, G. C., U. S. Bureau of Fisheries, Yes Bay, via Ketchikan, Alaska.  
'15 LEDGERWOOD, LeROY, Tehama, Cal.  
'13 LEE, HARRY S., 374 Washington St., Boston, Mass.  
'10 LEE, W. McDONALD, Commissioner of Fisheries, Irvington, Va.  
'02 LEWIS, CHARLES E., Chamber of Commerce, Minneapolis, Minn.  
'15 LINDAHL, SETH H., 7732 Chauncey Ave., Chicago, Ill.  
'15 LINDENBERGER, B., Smith Bldg., Seattle, Wash.  
'10 LINTON, DR. EDWIN, Washington and Jefferson College, Washington, Pa.  
'16 LIPINSKY, M. N., Winona, Minn.  
'06 LOCHER, WM., Kalamazoo, Mich.  
'12 LOESCH, H. C., Colorado Springs, Colo.  
'15 LOWELL, MANSFIELD, San Francisco, Cal.  
'16 LOWRANCE, W. J., Berwick, La.  
'16 LUDWIG, JOHN, Grand Isle, La.  
'16 LYCAN, FRANK S., Bemidji, Minn.  
'98 LYDELL, DWIGHT, Michigan Fish Commission, Comstock Park, Mich.  
'10 MABIE, CHARLES H., Maywood, N. J.  
'13 MACCALLUM, G. A., M.D., 981 Madison Ave., New York, N. Y.  
'11 McDONALD, CARL K., U. S. Bureau of Fisheries, Leadville, Colo.  
'14 McDONALD, E. B., Liggett and Myers Tobacco Co., St. Louis, Mo.  
'03 McDUGAL, J. M., Gunnison, Colo.  
'12 McREYNOLDS, B. B., Water Superintendent, Colorado Springs, Colo.  
'03 MAHONEY, A. H., U. S. Bureau of Fisheries, Quilcene, Wash.  
'15 MAILLIARD, JOSEPH, 1815 Vallejo St., San Francisco, Cal.  
'80 MALLORY, CHARLES, Port Chester, N. Y.  
'10 MANNFELD, GEO. N., Indianapolis, Ind.  
'97 MANTON, DR. W. P., 32 Adams Ave. West, Detroit, Mich.

- '16 MARDEN, CHAS. S., Moorehead, Minn.  
'11 MARDORF, H. F., 4068 Olive St., St. Louis, Mo.  
'11 MARINE, DR. DAVID, Western Reserve University, Cleveland, Ohio.  
'98 MARKS, J. P., Michigan Fish Commission, Paris, Mich.  
'99 MARSH, M. C., 113 High St., Buffalo, N. Y.  
'16 MARSHALK, PAUL, Warroad, Minn.  
'06 MARTY, JOHN M., Minnesota Fish and Game Association, St. Paul, Minn.  
'12 MASON, C. C., Hermit, Colo.  
'15 MATTLEDGE, HENRY, 335 Greenwich St., New York City.  
'14 MAY, JACOB, 3452 St. Vincent St., St. Louis, Mo.  
\*94 MEEHAN, W. E., 422 Dorset St., Mt. Airy, Philadelphia, Pa.  
'11 MEENTS, R. R., President Illinois Fish Commission, Ashkum, Ill.  
'14 MERCER, JESSE E., U. S. Biological Survey, Washington, D. C.  
'13 MERRILL, ARTHUR, Wilkinsonville, Mass.  
'99 MERRILL, M. E., U. S. Bureau of Fisheries, St. Johnsbury, Vt.  
'13 MERRISON, W. B., Saginaw, Mich.  
'11 MEYER, GUSTAV J. T., 829-831 South Delaware St., Indianapolis, Ind.  
'02 MILLER, FRANK, Ohio Fish and Game Commission, Put-in Bay, Ohio.  
'08 MILLER, FRANK M., President Board of Commissioners for the Protection of Birds, Game and Fish, 605 Maison Blanche Bldg., New Orleans, La.  
'92 MILLS, G. T., Chairman State Fish Commission, Carson City, Nev.  
'10 MINER, ROY W., American Museum of Natural History, New York City.  
\*13 MIXTER, SAM'L J., M.D., 180 Marlboro St., Boston, Mass.  
'13 MONROE, OTIS D., Supt. State Fish Hatchery, Palmer, Mass.  
'13 MONROE, WM. Palmer, Mass.  
'13 MOORE, ALFRED, 618 American Bldg., Philadelphia, Pa.  
'04 MOORE, DR. H. F., U. S. Bureau of Fisheries, Washington, D. C.  
'14 MOORE, JOHN D., State Conservation Commission, Albany, N. Y.  
'05 MORCHER, GEORGE, London, Ohio.  
'15 MORGULIS, DR. SERGIUS, Creighton Univ., Omaha, Nebr.  
'04 MORRIS, DR. ROBERT T., 616 Madison Ave., New York City.  
'09 MORTON, W. P., 105 Sterling Ave., Providence, R. I.  
'10 MOSER, CAPTAIN JEFFERSON F., General Superintendent Alaska Packers' Association, San Francisco, Cal.  
'16 MUNCH, WM. F., Crookston, Minn.  
'10 MUNLY, M. G., 1006 Yeon Building, Portland, Ore.  
'13 MURPHY, C. H. Sabattis, N. Y.  
'14 MYERS, I. S., 604 Norwood St., Akron, Ohio.  
  
'73 and '10 NEIDLINGER, PHILIP, 2225 Emmons Ave., Sheepshead Bay, N. Y.  
'16 NELSON, CHAS. A. A., Lutsen, Minn.  
'15 NESLEY, CHAS. H., 438 W. 34th St., New York City.  
'86 NEVINS, JAMES, Superintendent Wisconsin Fish Commission, Madison, Wis.  
\*07 NEWMAN, EDWIN A., President Aquarium Fisheries Co., 4305 8th St., N. W., Washington, D. C.  
'13 NEWPORT FREE LIBRARY, Newport, R. I.  
'13 NEWPORT HISTORICAL SOCIETY, Newport, R. I.  
'10 NICHOLS, JOHN TREADWELL, American Museum of Natural History, New York City.  
'14 NIGHTINGALE, H. W., 740 Salem St., Malden, Mass.  
'16 NILSON, L. A., Orangeburg, S. C.

- '13 OAKES, WM. H., 24 Union Park St., Boston, Mass.  
'16 O'BRIEN, MARTIN, Crookston, Minn.  
'97 O'BRIEN, W. J., Supt. of Hatcheries, Nebraska Game and Fish Commission, Gretna, Neb.  
'95 OHAGE, DR. JUSTUS, St. Paul, Minn.  
'13 O'HARA, JOSEPH, Pleasant Mount, Pa.  
'00 O'MALLEY, HENRY, U. S. Bureau of Fisheries, Washington, D. C.  
'15 OPDENWEYER, JOHN W., Sorrento, La.  
\*10 OSBURN, PROF. RAYMOND C., Ohio State University, Columbus, Ohio.  
'12 OTIS, SPENCER, Railway Exchange, Chicago, Ill.
- '04 PALMER, DR. THEODORE S., United States Department of Agriculture, Washington, D. C.  
'04 PARKHURST, HON. C. FRANK, 54 Barnes St., Providence, R. I.  
'15 PARSONS, JOHN S., State Commissioner of Fisheries, Accomac, Va.  
'07 PATCHING, FRED, Loring, Alaska.  
'13 PATTERSON, A. G., Kentucky Fish and Game Commission, Pineville, Ky.  
'16 PAYNE, F. T., New Orleans, La.  
'11 PELL, GEO. W., 520 16th St., Denver, Colo.  
'05 PEOPLES, HIRAM, New Providence, Pa.  
'09 PFLEUGER, J. E., Akron, Ohio.  
'13 POOLE, GARDNER, 126 Atlantic Ave., Boston, Mass.  
'11 POKOQUALINE FISH ASSOCIATION, 233 Dock St., Philadelphia, Pa.  
'09 POMEROY, GEO. E., Toledo, Ohio.  
'04 POPE, T. E. B., Curator, Public Museum of the City of Milwaukee, Milwaukee, Wis.  
'06 PORTER, RICHARD, Board of State Fish Commissioners, Paris, Mo.  
'09 POSTAL, FRED, State Board of Fish Commissioners, Detroit, Mich.  
'08 PRINCE, PROF. E. E., Dominion Commissioner of Fisheries, Ottawa, Canada.  
'16 PURDY, DORMAN S., 115 Eddy St., Ithaca, N. Y.
- '03 RACE, E. E., U. S. Bureau of Fisheries, Green Lake, Me.  
'10 RADCLIFFE, LEWIS, U. S. Bureau of Fisheries, Washington, D. C.  
'84 RATHBUN, DR. RICHARD, Assistant Secretary, Smithsonian Institution, Washington, D. C.  
'93 RAVENEL, W. DE C., U. S. National Museum, Washington, D. C.  
'16 RAY, J. E., Alexandria, La.  
'13 REDWOOD LIBRARY, Newport, R. I.  
'09 REED, DR. H. D., Cornell University, Ithaca, N. Y.  
'13 REIDEL, F. K., Pleasant Mount, Pa.  
'93 REIGHARD, PROF. JACOB E., University of Michigan, Ann Arbor, Mich.  
'16 RENAUD, JOHN K., New Orleans, La.  
'13 RHINES, WALLACE D., Foreman, State Fish Hatchery, Linlithgo, N. Y.
- '15 RICH, E. A. Co., 4 Boston Fish Pier, Boston, Mass.  
'98 RICHARDS, G. H., Seats Building, Boston, Mass.  
'15 RICHARDSON, ROBERT E., State Biological Laboratory, Havana, Ill.  
'10 RIDER, H. A., State Fish and Game Commissioner, St. Paul, Minn.  
'16 RILEY, MARK, San Marcos, Tex.  
'13 ROACH, EDWIN R., 518 Hamilton Bldg., Akron, Ohio.  
'99 ROBERTS, A. D., Auditor Inland Fisheries Commission, Woonsocket, R. I.  
'10 ROBERTS, B. H., 1413 New York Ave., Washington, D. C.  
'98 ROSENBERG, ALBERT, Kalamazoo, Mich.  
'10 ROWE, HENRY C., Groton, Conn.  
'16 ROWE, WM. H., West Buxton, Me.

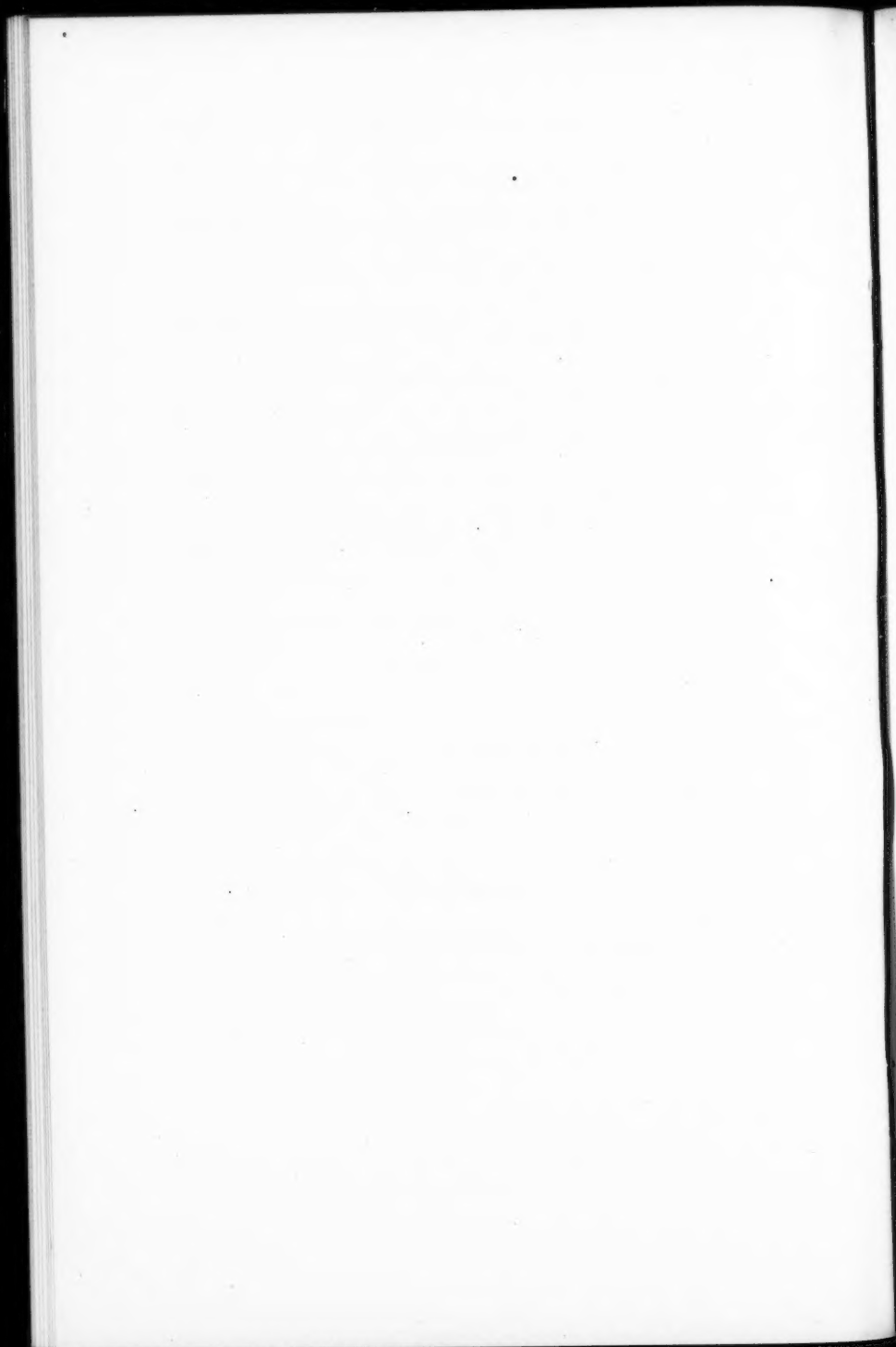
- '16 ROYCE, JAMES, DeBruce, Sullivan County, N. Y.  
'11 RUCKMAN, CHAS. W., U. S. Bureau of Fisheries, Homer, Minn.  
'14 RUSSELL, GEO. S., Bank of Commerce of N. A., Cleveland, O.  
'13 RUSSELL, J. R., U. S. Bureau of Fisheries, Birdsvew, Wash.  
'13 RYAN, CALVIN D., U. S. Bureau of Fisheries, Concrete, Wash.
- '16 ST. MARTIN, XAVIER H., Houma, La.  
'05 SAFFORD, W. H., Missouri Fish Commission, St. Joseph, Mo.  
'13 SANTA BARBARA PUBLIC LIBRARY, Santa Barbara, Cal.  
'16 SAUNDERS, DR. WADE HAMPTON, Box 296, Roanoke, Va.  
'15 SCHOFIELD, N. B., Sunnyvale, Cal.  
'15 SCHOONMAKER, BYRON C., De Bruce, N. Y.  
'16 SCHRADER, FRANZ, Route 1, Prince Bay, N. Y.  
'15 SEABORN, H. G., Tee Harbor Packing Co., Port Blakely, Wash.  
'00 SEAGLE, GEORGE A., U. S. Bureau of Fisheries, Wytheville, Va.  
'13 SEAGRAVE, ARNOLD, Woonsocket, R. I.  
'00 SELLERS, M. G., 1518 Sansom St., Philadelphia, Pa.  
'10 SHEBLEY, FRANK A., Superintendent Santa Cruz County Hatchery, Brookdale, Cal.  
'15 SHEBLEY, W. H., Sisson, Cal.  
'13 SHELLFORD, VICTOR E., Dept. Zool., University of Illinois, Urbana, Ill.  
'11 SHIRA, AUSTIN F., U. S. Bureau of Fisheries, Fairport, Iowa.  
'08 SHIRAS, GEO., 3d, Stoneleigh Court, Washington, D. C.  
'15 SIEBE, J. F., 430 Battery, San Francisco, Cal.  
'13 SINGLETON, J. ERNEST, Woonsocket, R. I.  
'01 SINGLETON, JAMES H., Wallum Lake, R. I.  
'03 SLADE, GEORGE P., 309 Broadway, P. O. Box 283, New York City.  
'13 SMITH, HERBERT C., White Cloud, Mich.  
'91 SMITH, DR. HUGH M., U. S. Commissioner of Fisheries, Washington, D. C.  
'99 SMITH, LEWIS H., Algona, Iowa.  
'05 SNYDER, J. P., U. S. Bureau of Fisheries, Cape Vincent, N. Y.  
'08 SPEAKS, JOHN C., Chief Warden Fish and Game Commission, Columbus, Ohio.  
'87 SPENSLEY, CALVERT, Mineral Point, Wis.  
'16 SPRAGLE, L. H., Henryville, Pa.  
'10 STACK, F. GEORGE, "Kamp Kill Kare," Raquette Lake, N. Y.  
'13 STAPLETON, J. J., Green Lake, Me.  
'04 STAPLETON, M. F., Supt., Cedar Island Lodge, Brule, Douglas Co., Wis.  
'15 STARR, C. D., Lewis Bldg., Portland, Ore.  
'00 STARR, W. J., State Board of Fish Commissioners, Eau Claire, Wis.  
'03 STEELE, G. F., Room 604, 18 E. 41st St., New York City.  
'11 STERETT, W. G., State Game, Fish and Oyster Commission, Port Lavaca, Texas.  
'03 STEVENS, ARTHUR F., 227 West Grand St., Elizabeth, N. J.  
'12 STIVERS, D. GAY, Butte Anglers' Association, Butte, Mont.  
'14 STONE, DR. WILLARD J., 3 Harold Arms, Toledo, Ohio.  
'04 STORY, JOHN A., U. S. Bureau of Fisheries, Green Lake, Me.  
'15 STRINGHAM, EMERSON, U. S. Bureau of Fisheries, Washington, D. C.  
'16 STRONNER, JESSE LEE, Orangeburg, S. C.  
'14 STRUVEN, CHAS. M., 114 S. Frederick St., Baltimore, Md.  
'16 STUCKE, EDWIN W., 3811 Brown St., Philadelphia, Pa.  
'13 SULLIVAN, WALTER E., Tufts School of Medicine, Boston, Mass.  
'04 SURBUR, THADDEUS, U. S. Bureau of Fisheries, Homer, Minn.  
'15 SUTRO, ADOLPH NEWTON, 1155 Pine St., San Francisco, Cal.  
'10 SWORD, C. B., New Westminster, British Columbia, Canada.

- '04 TALBOT, HENRY, Interstate Commerce Commission, Washington, D. C.
- '13 THAU, AUGUST B., 1421 Shelby St., Indianapolis, Ind.
- '99 THAYER, W. W., U. S. Bureau of Fisheries, Northville, Mich.
- '06 THOMAS, W. H., U. S. Bureau of Fisheries, Fairport, Iowa.
- '13 THOMAS, ADRIAN, 2012 Hanover Ave., Richmond, Va.
- '00 THOMPSON, W. P., 123 N. Fifth St., Philadelphia, Pa.
- '00 THOMPSON, W. T., U. S. Bureau of Fisheries, Bozeman, Mont.
- '08 THOMSON, G. H., Estes Park, Colo.
- '13 TICHENOR, A. K., Secretary Alaska Packers' Assn., San Francisco, Cal.
- '14 TILLMAN, ROBERT T., Beacon Paper Co., St. Louis, Mo.
- \*'13 TIMSON, WM., Vice-President, Alaska Packers' Assn., San Francisco, Cal.
- '92 TITCOMB, JOHN W., Conservation Commission, Albany, N. Y.
- '11 TONGUE, LEONARD M., 906 American Bldg., Baltimore, Md.
- '14 TORREY, PROF. HARRY BEAL, Reed College, Portland, Ore.
- \*'01 and '12 TOWNSEND, DR. CHARLES H., Director New York Aquarium, New York, N. Y.
- '13 TREKLER, COL. HARRY C., Allentown, Pa.
- '13 TRIGGS, CHAS. W., 218 N. Canal St., Chicago, Ill.
- '15 TROYER, M., Astoria Iron Works, Seattle, Wash.
- '16 TRULL, HARRY S., 317 E. 196th St., Fordham, N. Y.
- '99 TUBBS, FRANK A., U. S. Bureau of Fisheries, Mammoth Spring, Ark.
- '98 TULIAN, EUGENE A., Box 1267, New Orleans, La.
- '13 TURNER, CHAS. C., Judge Kentucky Court of Appeals, Frankfort, Ky.
- '13 TYSON, JAS. W., Connecticut Fish and Game Commission, Hartford, Conn.
- \*'11 VALLETTE, LUCIANO H., Chief of Section of Fish Culture, 827 Rivadavia, Buenos Aires, Argentina.
- '09 VAN ATTA, CLYDE H., U. S. Bureau of Fisheries, Yes Bay Hatchery, Ketchikan, Alaska.
- \*'14 VANDERGRIFF, S. H., 1728 New Hampshire Ave., Washington, D. C.
- '13 VARDEN, GEO. S., Paris, Ky.
- '10 VILES, BLAINE S., Inland Fish and Game Commissioner, Augusta, Me.
- '14 VOGEL, J. C., 2203 Pearl St., Philadelphia, Pa.
- '12 VOGT, JAMES H., Nevada Fish Commission, Carson City, Nevada.
- '09 VON LENDERKE, J., 200 Fifth Ave., New York City.
- '06 WADDELL, JOHN, Grand Rapids, Mich.
- '15 WAKEFIELD, L. H., 1310 Smith Bldg., Seattle, Wash.
- '96 WALKER, BRYANT, Detroit, Mich.
- '11 WALKER, DR. H. T., 210 Main St., Denison, Texas.
- '16 WALLACE, FREDERICK WILLIAM, 600 Read Bldg., 45 St. Alexander St., Montreal, Quebec, Canada.
- '96 WALTERS, C. H., Cold Spring Harbor, N. Y.
- '98 WARD, PROF. H. B., University of Illinois, Urbana, Ill.
- '12 WARD, J. QUINCY, Executive Agent, Kentucky Game and Fish Commission, Frankfort, Ky.
- '14 WASHBURN, PROF. F. L., 1112 Sixth St., S. E., Minneapolis, Minn.
- '13 WEBB, W. SEWARD, 44th St. and Vanderbilt Ave., New York City.
- '16 WEEKS, ANDREW GRAY, 8 Congress St., Boston, Mass.
- '13 WEIL, WALTER G., Majestic Bldg., Chicago, Ill.
- '15 WEIS, CAPT. JAS. E., St. Joseph, Mo.
- '15 WEISE, ENGLEBERG, Seattle, Wash.

- '13 WELSH, WM. W., Scientific Assistant U. S. Bureau of Fisheries, Washington, D. C.  
 '15 WELSCH, R., Bellingham, Wash.  
 '01 WENTWORTH, E. E., U. S. Bureau of Fisheries, Duckabush, Wash.  
 '13 WESTERFELD, CARL, New Call Bldg., San Francisco, Cal.  
 '13 WESTERMANN, J. H., Harrietta, Mich.  
 '01 WHEELER, CHARLES STETSON, Union Trust Building, San Francisco, Cal.  
 '15 WHEELER, FRED. M., 546 Fulton St., Chicago, Ill.  
 '04 WHITAKER, ANDREW R., State Fishery Commission, Phoenixville, Pa.  
 '96 WHITE, R. TYSON, 320 Bridge Street, Brooklyn, N. Y.  
 '10 WHITMAN, EDWARD C., Canso, Nova Scotia, Canada.  
 '15 WHITESIDE, R. B., 204 Sellwood Bldg., Duluth, Minn.  
 '01 WILSON, C. H. Glen Falls, N. Y.  
 '11 WILSON, J. S. P. H., Chairman, Board of Inland Game and Fish Commissioners, Auburn, Me.  
 '10 WINCHESTER, GRANT E., Forest, Fish and Game Commission, Bemus Point, N. Y.  
 '00 WINN, DENNIS, U. S. Bureau of Fisheries, 1217 L. C. Smith Bldg., Seattle, Wash.  
 '13 WINTER, J. H., Alaska Packers' Assn., San Francisco, Cal.  
 '99 WIRES, S. P., U. S. Bureau of Fisheries, Duluth, Minn.  
 \*'13 WISNER, J. NELSON, Director, Institute de Pesca del Uruguay, Punta del Esto, Uruguay.  
 \*'05 WOLTERS, CHAS. A., Oxford and Marvine Streets, Philadelphia, Pa.  
 '97 WOOD, C. C., Plymouth, Mass.  
 '13 WOODS, JOHN P., President, Missouri State Fish Commission, 1st and Wright Sts., St. Louis, Mo.  
 '14 WORK, GERALD, Perkins Hill, Akron, Ohio.  
 '84 WORTH, S. G., 518 Colonial Ave., Norfolk, Va.  
 '09 YERINGTON, EDWARD B., Board of Fish Commissioners, Carson City, Nev.  
 '16 YOUNGER, R. J., Houma, La.  
 '99 ZALSMAN, P. G., Grayling, Mich.

### Recapitulation

Honorary .....	72
Corresponding .....	17
Patrons .....	53
Active .....	554
Total .....	696





# CONSTITUTION

(As amended to date)

## ARTICLE I

### NAME AND OBJECT

The name of this Society shall be American Fisheries Society. Its object shall be to promote the cause of fish culture; to gather and diffuse information bearing upon its practical success, and upon all matters relating to the fisheries; the uniting and encouraging of all interests of fish culture and the fisheries, and the treatment of all questions regarding fish, of a scientific and economic character.

## ARTICLE II

### MEMBERSHIP

*Active Members.*—Any person may, upon a two-thirds vote and the payment of two dollars, become a member of this Society. In case members do not pay their fees, which shall be two dollars per year after first year, and are delinquent for two years, they shall be notified by the treasurer, and if the amount due is not paid within a month thereafter, they shall be, without further notice, dropped from the roll of membership.

Any library, sporting or fishing club, society, firm or corporation may upon two-thirds vote and the payment of the regular annual fee, become a member of this Society and entitled to all its publications.

*Life Members.*—Any person shall, upon a two-thirds vote and the payment of twenty-five dollars, become a life member of this Society, and shall thereafter be exempt from all annual dues.

*Patrons.*—Any person, society, club, firm or corporation, on approval by the Executive Committee and on payment of \$50.00, may become a Patron of this Society

with all the privileges of a life member, and then shall be listed as such in all published lists of the Society. The money thus received shall become part of the permanent funds of the Society and the interest alone be used as the Society shall designate.

*Honorary and Corresponding Members.*—Any person can be made an honorary or a corresponding member upon a two-thirds vote of the members present at any regular meeting.

The President (by name) of the United States and the Governors (by name) of the several states shall be honorary members of the Society.

*Election of Members Between Annual Meetings.*—The President, Recording Secretary and Treasurer of the Society are hereby authorized, during the time intervening between annual meetings, to act on all individual applications for membership in the Society, a majority vote of the Committee to elect or reject such applications as may be duly made.

### ARTICLE III

#### SECTIONS

On presentation of a formal written petition signed by one hundred or more members, the Executive Committee of the American Fisheries Society may approve the formation in any region of a Section of the American Fisheries Society to be known as the — Section.

Such a Section may organize by electing its own officers, and by adopting such rules as are not in conflict with the Constitution and By-Laws of the American Fisheries Society.

It may hold meetings and otherwise advance the general interests of the Society, except that the time and place of its annual meeting must receive the approval of the Executive Committee of the American Fisheries Society, and that without specific vote of the American Fisheries Society, the Section shall not commit itself to any expression of public policy on fishing matters.

It may further incur indebtedness to an amount necessary for the conduct of its work not to exceed one-half of the sum received in annual dues from members of said section.

Such bills duly approved by the Chairman and Recorder of the Section shall be paid on presentation to the Treasurer of the American Fisheries Society.

## ARTICLE IV

### OFFICERS

The officers of this Society shall be a president and a vice-president, who shall be ineligible for election to the same office until a year after the expiration of their term; a corresponding secretary, a recording secretary, an editor, a treasurer, and an executive committee of seven, which, with the officers before named, shall form a council and transact such business as may be necessary when the Society is not in session—four to constitute a quorum.

In addition to the officers above named there shall be elected annually five vice-presidents who shall be in charge of the following five divisions or sections:

1. Fish culture.
2. Commercial fishing.
3. Aquatic biology and physics.
4. Angling.
5. Protection and legislation.

Vice-Presidents of sections are expected to present reports at each annual meeting.

## ARTICLE V

### MEETINGS

The regular meeting of the Society shall be held once a year, the time and place being decided upon at the pre-

vious meeting, or, in default of such action, by the executive committee.

## ARTICLE VI

### ORDER OF BUSINESS

1. Call to order by president.
2. Roll call of members.
3. Applications for membership.
4. Reports of officers.
  - a. President.
  - b. Secretary.
  - c. Treasurer.
  - d. Vice-Presidents of Divisions.
  - e. Standing Committees.
5. Committees appointed by the president.
  - a. Committee of five on nomination of officers for ensuing year.
  - b. Committee of three on time and place of next meeting.
  - c. Auditing committee of three.
  - d. Committee of three on programme.
  - e. Committee of three on publication.
  - f. Committee of three on publicity.
6. Reading of papers and discussion of same.

(Note—In the reading of papers preference shall be given to the members present.)
7. Miscellaneous business.
8. Adjournment.

## ARTICLE VII

### CHANGING THE CONSTITUTION

The constitution of the Society may be amended, altered or repealed by a two-thirds vote of the members present at any regular meeting, provided at least fifteen members are present at said regular meeting.

